ASSIGNMENT 5

Textbook Assignment: "Test Equipment," pages 7-2 through 7-11; and "Maintenance/COSAL," chapter 8, pages 8-3 through 8-5, and 8-7 through 8-8. You will also need to refer to *Life Cycle Management of Portable Test Equipment, Measuring and Diagnostic Equipment (TMDE)* and *Ships' Maintenance and Material Management (3-M) Manual* (chapter 7 references), and *Procedures for Conducting a Shipboard Electromagnetic Interference (EMI) Survey (Surface Ships)* (chapter 8 references).

QUESTIONS 5-1 THROUGH 5-26 PERTAIN TO CHAPTER 7.

5-1. Any device that is functionally separate from, but permanently connected to, the prime equipment or system, and is used for the express purpose of testing that prime equipment or system is known as what type of test equipment?

1. Automatic test equipment
2. Mechanical test instrument
3. Test, measuring and diagnostic equipment
4. Built-in test equipment

5-2. Equipment designed to test an equipment or system for performance degradation and to perform fault isolation of unit malfunctions with a minimum of human intervention is known as what type of equipment?

1. Automatic test equipment
2. Mechnical test instrument
3. Test, measuring and diagnostic equipment
4. Built-in test equipment

5-3. Any device that is used to measure, calibrate, gauge, test, inspect, diagnose, or otherwise examine materials, supplies, and equipment to determine compliance with requirements established in technical documents is known as what type of test equipment?

1. Automatic test equipment
2. Mechnical test instrument
3. Test, measuring and diagnostic equipment
4. Built-in test equipment

5-4. Which of the following documents identifies the latest known requirements for test equipment for your ship?

1. SCLSIS
2. SPETERL
3. PEETE
4. MEASURE Format 310

5-5. At which of the following intervals will a ship normally receive its updated SPETERL?

1. Annually
2. At the start of an overhaul
3. Before an availability where major electronic change-outs will occur
4. Both 2 and 3 above

5-6. Which of the following is a good reason for keeping careful inventory and distribution records of test equipment?

1. To maintain effective use
2. To allow proper maintenance of test equipment
3. To enable monitoring of calibration status of test equipment
4. Each of the above

5-7. Refer to figure 7-2 in the TRAMAN. What information (10-digit number) is provided in the fifth column from the left of the sample SPETERL?

1. The manufacturer's number of the test equipment
2. The test equipment number
3. The allowance equipage list number
4. The application number

5-8. Which of the following is a good use for the reverse side of the NAVSUP Form 306?

1. To record test equipment calibration status
2. To record test equipment maintenance
3. To document sight inventories

5-9. Refer to figure 7-4 in the TRAMAN. What is the basic purpose of using an inventory record such as the one shown in the figure?

1. To maintain the location of a specific item of test equipment by the test equipment type
2. To maintain an inventory of onboard test equipments of a specific SCAT code, and identification, custody, and issue information about each piece of equipment
3. To maintain an inventory of each item of test equipment and custody signatures for each item issued

5-10. In what order should the "test equipment status inventory" cards be filed (other than by category)?

1. By SCAT code
2. By Work center/group
3. By test equipment model number
4. By group or type of test equipment

5-11. Which of the following is the best description of the "SCAT" code?

1. A 4-digit, numeric, selected category code that identifies a range of test equipment type
2. A 4-digit, numeric, subcategory code that identifies a range of measurements by functional category
3. A 5-digit, numeric, subcategory code that identifies a range of measurements by functional category
4. A 5-digit, numeric, selected category test equipment code that identifies a range of test equipment

5-12. The PEETE Index can be used to supersede or modify the SPETERL and as a basis for authorized procurement and requisition of items listed in the SPETERL.

1. True
2. False

5-13. From which of the following terms is the acronym "SCAT" derived?

1. Selected Category and Applicable Test equipment code
2. Support Category Applicable Test equipment code
3. Subcategory codes
4. Support Category codes

IN ANSWERING QUESTIONS 5-14 AND 5-15, REFER TO FIGURE 7-6 IN THE TRAMAN.

5-14. What section of the PEETE Index should you use to find out what equipments use a particular SCAT code?

1. Section I
2. Section II
3. Section III
4. Section V

5-15. What section should you use to locate the models of test equipment that may satisfy a particular SCAT code?

1. Section II
2. Section IV
3. Section V
4. Section VI

5-16. Refer to figure 7-7 in the TRAMAN. What appendix should you use to determine a stock number from a known SCAT code?

1. Appendix A
2. Appendix B
3. Appendix C
4. Appendix D

5-17. In addition to ship support requirements, the quantity of each SCAT also depends on which of the following factors?

1. The location of prime equipments and systems, and the number of these prime equipments and systems installed
2. The frequency of test equipment usage, and the ability to share test equipment among different divisions
3. The portability of the test equipment, and the number of personnel that use the test equipment
4. All of the above

5-18. At which of the following times should the SPETERL be "bumped" against the COSAL?

1. Annually
2. Semiannually
3. Only at the completion of overhaul
4. Before a major deployment

5-19. To report a PEETE configuration change, you should use which of the following forms?

1. OPNAV 4790/2K
2. OPNAV 4790/2L
3. OPNAV 4790/2P
4. OPNAV 4790/CK

5-20. Refer to figure 7-9 in the TRAMAN. After bumping the SPETERL and COSAL against one another, you find that a particular piece of test equipment required for PMS is on board and is listed in the SPETERL, but is not listed in the COSAL. What is the possible cause?

1. A deficiency in allowance
2. A change in quantity was not reported
3. Configuration changes were not reported
4. PMS requirements were not reported to NAVSEALOGSUPENGACT

5-21. When using OPNAV Form 4790/CK to report a turn-in or receipt of PEETE, you do not need to check the configuration file correction block at the top of the form.

1. True
2. False

5-22. To determine what GPETE excesses and deficiencies exist on board, you should look at what GPETE is on board. Which of the following sources/references should you use to determine the GPETE allowance?

1. Current SCLSIS
2. Current SPETERL
3. Approved ACRs
4. Both 2 and 3 above

5-23. For GPETE management purposes, the term "on board" means that the item has been sighted, and the term "physically accountable" means that the test equipment is actually on board or can be traced to a calibration or repair facility currently having temporary custody of the item.

1. True
2. False

5-24. Which of the following statements describes what you should do to correct a GPETE deficiency caused by obsolete equipment?

1. Submit an ACR and a 1348 supply requestion for a replacement for the obsolete equipment
2. Submit a report of survey (DD Form 200) for the obsolete GPETE and requisition for a replacement
3. Turn in the obsolete GPETE to supply; this will automatically generate a requirement/requisition for a replacement
4. Wait for the equipment to arrive, as you would for a "new or increased allowance"

5-25. The Navy Metrology and Calibration (METCAL) Program was instituted to help provide calibration facilities so sophisticated equipment, precise standards, and laboratory conditions would be available.

1. True
2. False

5-26. For a GPETE deficiency, if the cog is 7Z and if the item is a replacement for another item of GPETE that is or once was on board, what procedure should you follow to procure the replacement item?

1. Select the preferred model of test equipment which has the same SCAT code, then requisition the item by submitting a 1348 supply requisition for the item
2. Notify the applicable SYSCOM by message or speedletter, requesting a replacement
3. Submit an ACR to replace the item with a newer or better GPETE within the same SCAT code
4. Submit a report of survey and turn in the GPETE for which the replacement is required; this will generate a replacement/requisition

QUESTIONS 5-27 THROUGH 5-56 PERTAIN TO CHAPTER 8.

5-27. What type(s) of disturbances are referred to as electromagnetic interference?

1. Electrostatic disturbances only
2. Electromagnetic disturbances only
3. Both 1 and 2 above

5-28. Which of the following methods should you use to reduce or eliminate EMI on equipment that has been installed for some time?

1. Conduct an extensive EMI survey
2. Use everyday, common-sense approaches to maintaining the equipment
3. Contact a NAVELEX activity for immediate assistance in finding ways to control EMI
4. Both 2 and 3 above

5-29. Which of the following is a list of the primary types (sources) of electromagnetic interference?

1. Radio-frequency and natural only
2. Radio-frequency, natural, and man-made
3. Natural, inherent, and man-made
4. Inherent, motor, and man-made

5-30. What type (source) of EMI includes noise within a piece of electronic equipment, caused by thermal agitation of electrons following through circuit resistance?

1. Natural interference
2. Inherent interference
3. Radio-frequency interference
4. Man-made EMI

5-31. What type (source) of EMI can be severe, degrading the operation of shipboard or shore-based data processing equipment?

1. Natural interference
2. Inherent interference
3. Radio-frequency interference
4. Man-made EMI

5-32. What type of EMI is caused by events such as snow storms, electrical storms, rain, and solar radiation?

1. Natural
2. Inherent
3. Radio-frequency
4. Man-made

5-33. What type of EMI is normally noticed as background noise in a radio receiver tuned to a frequency between stations?

1. Natural
2. Inherent
3. Radio-frequency
4. Man-made

5-34. What type of EMI is commonly called static or atmospheric noise?

1. Natural
2. Inherent
3. Radio-frequency
4. Man-made

5-35. What type of EMI is produced by a number of different classes of electrical and electronic equipment, such as transmitters, welders, and electrical controllers?

1. Natural
2. Inherent
3. Radio-frequency
4. Man-made

5-36. What type of interference can cause problems with rf communications and data links, but does not cause many problems with modern digital data equipment?

1. Natural
2. Inherent
3. Man-made

5-37. What are the two types of frequency spectrum interference?

1. Wideband and narrowband
2. Broadband and shortband
3. Broadband and narrowband
4. Highband and lowband

5-38. What type of spectrum interference consists of a single frequency or a low range of interference frequencies, and has a minor effect on communications or electronic equipment?

1. Broadband
2. Narrowband
3. Wideband
4. Shorthand

5-39. What type of spectrum interference occupies a relatively large part of the electromagnetic spectrum?

1. Broadband
2. Narrowband
3. Wideband
4. Shorthand

5-40. What type of spectrum interference is usually caused by arcing or corona, and causes most EMI problems in digital equipment?

1. Broadband
2. Narrowband
3. Wideband
4. Shorthand

5-41. Arcing or corona is generated in which of the following ways?

1. By worn or improperly installed brushes of motors or generators and arcing of contacts in electrical controllers or stepping switches
2. By ignition systems of motor vehicles and igniters for jet engines
3. By defective fluorescent lights and defective power lines or power transformers
4. Each of the above

5-42. Improperly bonded lifelines, rigging, and stanchions produce a significant amount of EMI by acting as nonlinear mixing devices and antennas, receiving a number of different transmitted frequencies, mixing them, and reradiating them over a broad spectrum.

1. True
2. False

5-43. What type of EMI is basically blocked out by a ship's steel hull and construction?

1. Narrowband
2. Broadband
3. Natural
4. Man-made

5-44. Which of the following factors must be considered for shipboard installation of computer and digital equipment?

1. Equipment location and source of power
2. Equipment shielding and system/equipment grounds
3. Interconnecting cables
4. All of the above

5-45. As you finish working on an equipment, which of the following procedures concerning EMI should you follow before you return the equipment to use?

1. Ensure that all cover plates are installed and fastened correctly, and ensure that all drawers are secured correctly
2. Check all EMI-reducing contacts and/or wire gaskets for their condition. Replace them as necessary
3. Both 1 and 2 above
4. Ensure that all power being supplied to the equipment is filtered

5-46. Which of the following statements concerning interconnecting cables used in shipboard electronic and digital systems is NOT correct?

1. All interconnecting cables should be shielded cables
2. Cables for digital equipments and audio should always run parallel to and in the same cableways as other cables, such as cables carrying rf signals and high-power-pulse cables
3. The shield and connector shell should be electrically connected and properly secured at both ends
4. Shielding protects the data and voice cables from EMI to a great extent

5-47. Unusual random EMI problems in equipment can sometimes be caused by a defective line filter or unusually large voltages on power lines.

1. True
2. False

5-48. Control of EMI at a shore-based installation requires which of the following factors to be considered in addition to those that apply to shipboard installation?

1. Shore power
2. Site location
3. Soil Quality
4. Both 2 and 3 above

5-49. Which of the following precautions for EMI, if any, may be required at shore-based equipment sites near industrial facilities?

1. Shielding may be needed around especially sensitive pieces of equipment
2. Additional line filters and regulators for power lines may be needed to reduce EMI and provide line power within specifications
3. Both 1 and 2 above
4. None

5-50. Which of the following statements is correct concerning soil quality at shore-based equipment sites?

1. Soil with a good conduction will cause EMI problems because the soil will act as an antenna
2. A system-ground bus is usually attached to a grounding rod driven into the soil
3. Soil that is dry, sandy, and rocky is preferable to other types of soil because grounding problems are minimal

5-51. EMI surveys are conducted to distinguish which equipment is affected by EMI and to determine the extent of the interference. In which of the following situations should an EMI survey be required or requested?

1. When a ship is newly constructed
2. When a ship receives an overhaul or major repair work that changes its electro-magnetic confiquration
3. When EMI is affecting the ship's equipments and ship's force and assistance personnel cannot locate the source
4. All of the above

5-52. Detailed information on EMI surveys and reports may be found in which of the following publications/instructions?

1. OPNAVINST 5310.19
2. OPNAVINST 4790.4
3. MIL-STD-1605
4. SPCCINST 4441.170

5-53. When an EMI test plan is prepared, which of the following information should be provided?

1. The number of items of equipment
2. The positions to be monitored
3. The approximate time the survey should take
4. All of the above

5-54. Which phase of an EMI survey test phases consists of operating certain active electronic equipment while receivers and susceptible equipment are monitored for EMI?

1. Phase I
2. Phase II
3. Phase III
4. Phase IV

5-55. Which phase of an EMI survey test phases consists of measuring electromagnetic emissions from certain installed equipment to determine whether these emissions are potential sources of interference to the ship's electronic systems?

1. Phase I
2. Phase II
3. Phase III
4. Phase IV

5-56. After an EMI survey has been completed a report is made, stating the cause and severity of the interference and other pertinent information. Which of the following information is also provided in the report?

1. The effects on ship's scheduling, and the personnel responsible for any additional work or material required
2. The methods recommended for reducing or eliminating the interference, and the estimated manpower and materials required to accomplish the recommended changes
3. Both 1 and 2 above
4. The equipments to be condemned from operation and the use of the equipment affected by the EMI